



Facial eczema of sheep and cattle

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Facial eczema is a type of sunburn (photosensitisation) affecting exposed areas of pale skin of sheep and cattle. It is caused by a poisonous substance called "sporidesmin", which is produced on pasture plants by the fungus *Pithomyces chartarum*.

In Victoria, the disease has occurred mainly in East Gippsland between Rosedale and Bairnsdale. Major outbreaks occurred in sheep in 1956 and 1959, and in cattle on irrigated pasture in 1974. Sporadic cases, mainly in sheep, have been recorded in other parts of Victoria.

Signs of disease

The disease in stock may be seen between seven and 20 days of pick-up of the toxic spores from the pasture. The toxin is absorbed from the intestine and reaches the liver, where it causes severe damage, first to the bile ducts and then to the liver cells themselves. All the outward signs of facial eczema result from the liver damage caused by sporidesmin.

Sheep

The signs range from mild photosensitisation to severe jaundice and death, depending on the amount of sporidesmin consumed. Sunburn is the most consistent sign, and usually affects the exposed areas of the skin of the face, ears, teats, and vulva. The skin over these areas becomes reddened, and then goes crusty and dark. It eventually peels off leaving large raw areas, which are susceptible to infections and flystrike. The sunburn is often accompanied by watery swelling of the underlying tissues, resulting in drooping ears and puffy eyes and face. Jaundice (yellowing of mucous membranes) is often seen at this stage. The animals lose weight rapidly. Most animals recover from the acute phase, but they may take many months to 'regain condition and wool growth. Some never recover, and either die or are culled.

Cattle

The signs are similar to those in sheep, but the sunburn also affects areas of skin lacking dark pigmentation (that is, areas covered by white hair) as well as exposed skin. In dairy cattle, the udder and teats are often severely affected, and milk production drops sharply. Loss of weight and general illness are often severe in cattle, and death, although uncommon, can occur up to months after the initial liver damage occurs.

When the trouble occurs

The disease is most common from February to May. The fungus needs warm, moist conditions for growth and may reach dangerous levels on pasture following humid periods of 72 hours or more during which the temperature at ground level does not fall below 15°C. Moisture from light rainfall or recent irrigation must also be present at ground level.

At least two "danger" periods up to two or three weeks apart are required for the fungus to grow enough to cause disease.

Given suitable temperature and moisture conditions, the fungus grows in "clusters" on the paddock, rather like mushrooms, but is normally not visible to the naked eye. It multiplies by producing millions of spores which are coated with the toxin sporidesmin. Freshly produced spores are the most toxic; if fungal growth stops after change in the weather, the residual spores on the pasture lose their toxicity within one or two weeks.

The fungus will grow on most pasture plants, but it grows best on perennial ryegrass. It grows in the dead pasture litter at the base of the plants; most toxic spores are found in the bottom 25 mm of the pasture. When the fungus reaches toxic levels, animals grazing short pasture at high stocking rates are at greatest risk.

Prevention and control

In the East Gippsland area, where outbreaks of facial eczema are more likely to occur, the Department of Agriculture provides a monitoring service during the later summer and the autumn. Farmers are warned when facial eczema can be expected, so that they can take preventive measures.

Daily and overnight minimum grass temperatures and rainfall are recorded, and fungus activity on pasture is measured by trapping and counting spores on paddocks through the area.

The warning system is a guide only-conditions vary between farms and between paddocks. However, an official warning generally means that the fungus is on the rampage, and that spore numbers are likely to be rising on many farms.

The basis of prevention of facial eczema is stock management. When a warning is issued, the following

alternatives are available, all of which will help to minimise the intake of toxic pasture.

1. Shift stock to the longest pasture possible, and try to avoid very close grazing.
2. Avoid paddocks cut for hay or late-topped. These are likely to be more toxic because of greater quantities of pasture litter.
3. In general, paddocks sheltered by windbreaks or hills are more dangerous and should be avoided.
4. Feed hay or other supplements to preserve ground feed and minimise close grazing of pasture.
5. Summer-growing crops are generally safer than pastures, and stock should be given as much access to these as possible where they are available.
6. On irrigated farms, if pasture is short and grazing pressure is heavy, farm irrigation may be valuable if used immediately.

In New Zealand, where facial eczema is a regular annual problem, spraying of a fungicide is effective. For optimum effect, the fungicide must be sprayed before the danger period. In Victoria, even in East Gippsland, outbreaks are so uncommon that routine preventive spraying cannot be justified. However, researchers are continuing to examine the possible use of spraying under Gippsland conditions.

Treatment

If facial eczema is suspected in sheep or cattle, a veterinary practitioner should be called.

Affected animals should be sheltered from direct sunlight if possible. In dairy herds, affected cows should be dried off and shifted to low-risk pasture to ensure recovery and satisfactory future production.

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